Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus for reducing distortion of a power amplifier, comprising:

a controller that compares a signal fed back from the power amplifier and an input signal and generates ~~at least one of a~~ temperature and power/phase compensation ~~coefficient~~ coefficients and a frequency compensation coefficient based on the comparison; and

a pre-distorter that adjusts the input signal based on the ~~coefficient~~ temperature and phase/power coefficients and the frequency compensation coefficient generated by the digital pre-distorter controller.

2. (Currently Amended) The apparatus of claim 1, wherein the pre-distorter comprises:

a look-up table that stores the temperature and power/phase compensation ~~coefficient~~ coefficients generated by the controller;

a pre-distorter kernel that compensates the input signal based on the ~~coefficient~~ coefficients stored in the look-up table;

an instantaneous power measuring unit that measures an instantaneous power of the input signal; and

an average power measuring unit that measures an average power of an output signal of the instantaneous power measuring unit.

3. (Original) The apparatus of claim 2, wherein the look-up table includes a plurality of aligned tables that discriminate a plurality of coefficients by average powers.

4. (Currently Amended) The apparatus of claim 3, wherein the table includes a plurality of blocks that store respective temperature and power/phase compensation coefficients which are discriminated based on instantaneous powers.

5. (Currently Amended) The apparatus of claim 1, wherein the pre-distorter comprises:

a look-up table that stores ~~a plurality of~~ the temperature and power/phase compensation coefficients applied from the controller;

a pre-distorter kernel that compensates the input signal based on one of the compensation coefficients from the look-up table;

a correction filter that receives the frequency compensation coefficient and compensates for frequency distortion characteristics in a signal output from the pre-distorter kernel; and

an instantaneous power measuring unit that measures an instantaneous power of the input signal.

6. (Currently Amended) The apparatus of claim 1, wherein the pre-distorter comprises:

a first look-up table that stores the temperature and power/phase compensation ~~coefficient~~ coefficients generated by the controller;

a pre-distorter kernel that compensates the input signal based on the temperature compensation and power/phase ~~coefficient~~ coefficients stored in the first look-up table;

a correction filter that compensates an output signal of the pre-distorter kernel based on the frequency compensation coefficient;

an instantaneous power measuring unit that measures an instantaneous power of the input signal; and

an average power measuring unit that measures an average power of an output signal of the instantaneous power measuring unit.

7. (Original) The apparatus of claim 6, wherein the input signal is a narrow-band frequency signal.

8. (Currently Amended) The apparatus of claim 6 further comprising:

a second look-up table that stores ~~a plurality of~~ the frequency compensation coefficients by average powers, if the input signal is a wide-band frequency.

9. (Currently Amended) The apparatus of claim 6, wherein the first look-up table includes a plurality of aligned tables which discriminate the temperature and power/phase compensation coefficients by average powers.

10. (Currently Amended) The apparatus of claim 9, wherein the first look-up table includes a plurality of blocks which store by instantaneous powers the temperature and power/phase compensation coefficients discriminated by average powers.

11. (Original) The apparatus of claim 1, wherein the controller and pre-distorter are digital devices.

12-17. (Canceled).

18. (Currently Amended) An apparatus for reducing distortion of a power amplifier, comprising:

a digital pre-distorter controller that compares a signal fed back from a power amplifier and an input signal and generates a power/phase compensation coefficient and at least one of a temperature compensation coefficient and a frequency compensation coefficient based on the comparison;

an instantaneous power measuring unit that measures an instantaneous power of the input signal;

an average power measuring unit that generates an average power from an output signal of the instantaneous power measuring unit;

a first look-up table that stores the power/phase compensation coefficient and the temperature compensation coefficient and outputs the compensation coefficients according to an instantaneous power and an average power of the input signal;

a pre-distorter kernel that compensates the input signal based on the power/phase compensation coefficient and the temperature compensation coefficient output from the look-up table; and

a correction filter that compensates a frequency distortion characteristic of the power amplifier by adjusting an output signal of the pre-distorter kernel based on the frequency compensation coefficient.

19. (Original) The apparatus of claim 18, wherein the input signal is a narrow-band frequency signal.

20. (Original) The apparatus of claim 18, further comprising:

a second look-up table for storing a plurality of frequency compensation coefficients by average powers, if the input signal is a wide-band frequency signal.

21. (Original) The apparatus of claim 18, wherein the instantaneous power and the average power are used as a basis for determining positions where the power/phase compensation coefficient and the temperature compensation coefficient are stored.

22-27. (Canceled).

28. (Currently Amended) A method for reducing distortion of a power amplifier, comprising:

generating/storing frequency compensation coefficients based on average power levels of a training signal;

generating/storing temperature and power/phase compensation coefficients based on instantaneous power and average power of a signal compensated by applying the frequency compensation coefficient;

compensating an input signal by applying one of the temperature and power/phase compensation coefficients corresponding to an instantaneous power and an average power of the input signal;

compensating the ~~temperature-compensated~~ temperature and power/phase compensated signal using a corresponding one of the frequency compensation coefficients; and

re-generating a new frequency compensation coefficient and a new temperature and power/phase compensation coefficient based on a signal fed back from the power amplifier.

29. (Currently Amended) The method of claim 28, wherein the re-generating step comprises:

comparing the pre-compensated signal and the input signal and generating [[a]] new frequency, temperature and phase/power compensation coefficients ~~compensation coefficient and a new temperature compensation coefficient~~ based on the comparison; and

storing the new ~~temperature~~ compensation ~~coefficient~~ coefficients.

30. (Currently Amended) The method of claim 28, wherein the frequency compensation coefficients and the temperature and phase/power compensation coefficients

are stored in a look-up table based on instantaneous power or average power levels of signal input to the power amplifier

31. (Currently Amended) The method of claim 28, wherein the instantaneous power and the average power are used as addresses for storing the frequency compensation coefficients or the temperature and phase/power compensation coefficients.

32-35. (Canceled).

36. (Currently Amended) A method for reducing power amplifier distortion, comprising:

generating temperature, frequency and power/phase compensation coefficients based on an operation of an amplifier;

adjusting an input signal ~~based on an operating frequency of~~ input to the amplifier using the temperature, frequency and power/phase coefficients to reduce the power amplifier distortion caused by temperature, frequency and power/phase characteristics of the amplifier; and

inputting the adjusted signal into the amplifier.

37. (Original) The method of claim 36, wherein the adjusting step includes:

comparing the input signal to an output signal of the amplifier;

generating a frequency compensation coefficient based on the comparison; and

adjusting the input signal based on the frequency compensation coefficient to reduce a non-linear characteristic of the amplifier.

38. (Original) The method of claim 37, wherein adjusting the input signal based on the frequency compensation coefficient includes: modifying the input signal to have a frequency distortion characteristic which is inverse to a frequency distortion characteristic of the power amplifier.

39. (Currently Amended) The method of claim 36, further comprising:

storing a plurality of frequency compensation coefficients in a storage area based on a corresponding plurality of amplifier power levels;

determining a power of the ~~amplifer~~ amplifier; and

locating in the storage area the frequency compensation coefficient used to adjust the input signal based on the amplifier power measurement.

40. (Currently Amended) An apparatus for reducing power amplifier distortion, comprising:

~~a detector which detects a temperature of the amplifier; and~~

generating temperature, frequency and power/phase compensation coefficients based on an operation of an amplifier;

a processor which adjusts an input signal ~~based on the temperature of~~ input to of the amplifier using the temperature, frequency and power/phase coefficients to reduce the power amplifier distortion caused by temperature, frequency and power/phase characteristics of the amplifier.

41. (Currently Amended) The apparatus of claim 40, wherein the processor includes:

a comparator which compares the input signal to an output signal of the amplifier;

a determining unit which determines [[a]] temperature and phase/power compensation ~~coefficient~~ coefficients based on the comparison; and

a kernel which adjusts the input signal based on the temperature and phase/power compensation ~~coefficient~~ coefficients to reduce a non-linear characteristic of the amplifier.

42. (Currently Amended) The apparatus of claim 41, wherein the kernel modifies the input signal to have a temperature and phase/power distortion characteristic which is inverse to a temperature and phase/power distortion characteristic of the power amplifier.

43. (Currently Amended) The apparatus of claim 40, further comprising:

a storage unit which stores a plurality of temperature and phase/power compensation coefficients based on a corresponding plurality of amplifier power levels; and

a measurement unit which determines a power of the ~~amplifer~~ amplifier, wherein the storage unit outputs the temperature and phase/power compensation ~~coefficient~~ coefficients used to adjust the input signal based on the amplifier power measurement.

44-47. (Canceled).